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cont.
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oxygenate blend has the following properties:

- (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and
- (b) an alcohol content greater than about 5.8 volume percent.

Claim 24. (Once Amended). The process of Claim 23 wherein the alcohol is ethanol.

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Claim 26. (Once Amended). A process for preparing a gasoline-oxygenate blend comprising combining a blend of hydrocarbons with an alcohol, wherein the resulting gasoline-oxygenate blend has the following properties:

- (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and
- (b) an alcohol content greater than about 5.8 volume percent.

Claim 27. (Once Amended). The process of Claim 26 wherein the alcohol is ethanol.

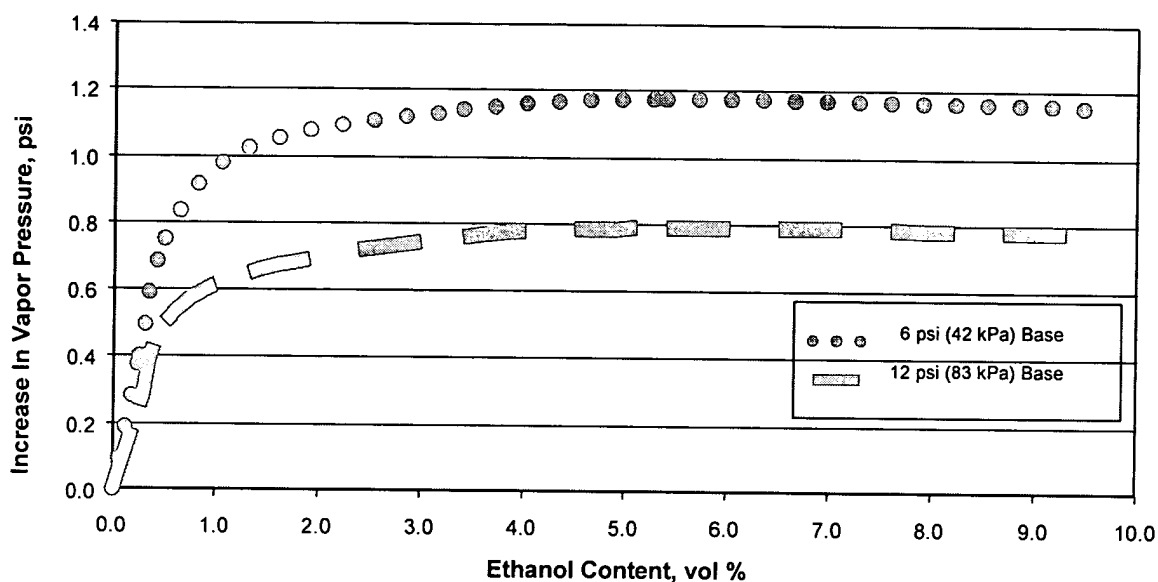
REMARKS

Status of Claims in Application. Claims 23, 24, 26 and 27 have been amended. Claims 1-29 are the active claims of this application. Reconsideration is respectfully requested.

Brief Discussion of Invention. Alkanols have relatively low boiling points. For instance, ethanol boils at 78°C. The boiling point of alkanols, while being significantly higher than the initial boiling point of gasoline of approximately 30°C, is lower than the mid-boiling point of gasoline of around 100 °C. The vapor pressure of neat alkanols is lower than that of gasoline. Consequently one would expect that blending an alkanol with gasoline would reduce RVP and somewhat increase mid-range volatility. However, when alkanol is blended with gasoline at

concentrations up to around 30%, an unusual phenomenon occurs. There is an unexpected increase in vapor pressure which causes the blend to have significantly higher RVP than the base gasoline. This unexpected phenomena is shown in Figure 1 below for ethanol.

Figure 1 : Effect of ethanol addition on Reid Vapor Pressure at two levels of basefuel RVP



The effect of alkanols, such as methanol and ethanol, on the increase in vapor pressure of a gasoline blend is reported in API Publication 4286, a copy of which is attached. Note in particular Figures 9, 10 and 11 on pages 12-13 as well as pages 23-24.

As clearly shown in Figure 9, the maximum RVP increase occurs at around 5-15 % v/v alkanol which is the level of alkanol in most commercial blends. The resulting blend is often too volatile, unless base fuel volatility is adjusted to meet fuel specifications. The addition of 10 % v/v ethanol to a base fuel composition typically raises the RVP by about 1 psi. The increase for 10% v/v methanol is almost 3 psi. See Figure 10 of API Publication 4286.

Applicants' invention relates to novel compositions which meet RVP specifications by adjustment to the base fuel composition. Note, for instance, reference to the preferred butane percentile in the FFB in line 2 of page 15 of this specification. This, in turn, causes a reduction in

the vapor pressure of the light components of the base gasoline. The addition of alkanol to the base gasoline renders a RVP within the claimed limitations. In one embodiment of the invention, the alkanol may be introduced to the base gasoline at a remote location, such as a distribution terminal. This is often necessary since gasoline containing an alkanol cannot generally be shipped via common pipelines.

Rejection of Claims 10 – 17 Over Orr. The Examiner has rejected Claims 10-17 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,039,772 ("*Orr*"). This ground for rejection is respectfully traversed. *Orr* is directed to a cyclomatic manganese tricarbonyl containing fuel composition meeting federal hydrocarbon emission standards by incorporation of an aliphatic alcohol. The Examiner refers to Column 14, line 50 to Column 17, lines 1 – 17 and claims 1, 2 and 7. It is believed she specifically relies on the 7.2.RVP in Column 16, line 53. The referenced composition, however, is *not* for a alcohol containing gasoline formulation. The section relied upon by the Examiner, line 50 of col. 14 to line 15 of col. 17 is directed, instead, to the "unleaded base gasoline composition". This composition does not contain alcohol. While the reference indicates that the alcohol gasoline formulation may contain an alkanol, it does *not* recite any RVP for the resulting formulation. One would expect, based upon the teachings set forth above and the attached API Publication 4261, that any alcohol gasoline formulation of *Orr* would have a RVP greater than 7.2. In fact, based on API Publication 4261, the estimated RVP of an alcohol gasoline formulation disclosed in *Orr* would be at least 8.2. *Orr*, therefore, does not anticipate Claims 10-17 of Applicants.

Rejection of Claims Over Redacted Gasoline Data/Gasoline Data. The Examiner has further rejected Claims 1-4, 5-6, 7-13, 14-15 and 16-17 under 35 U.S.C. § 102 (b) as being anticipated by Redacted Gasoline Data from Third Party Source ("*Redacted Data*") and Gasoline Data From

a Third Party ("*Gasoline Data*"). This ground for rejection is respectfully traversed. Both *Redacted Data* and *Gasoline Data* report the same datapoint for a gasoline formulation. This datapoint is from a gasoline formulation collected in Des Moines, Iowa around June, 1992. The references cited are excerpts from a report prepared by Southwest Research Institute ("SRI"). The datapoint relied upon by the Examiner is an outlier and one of skill in the art would have recognized this datapoint to be an outlier. See paragraph 5 of Affidavit of Michelle Ratchford, also attached. In light of the fact that the datapoint is an outlier, and in view of the attached affidavit, this ground for rejection should be withdrawn. See further *In re Yale*, 434 F.2d 666, 168 USPQ 46 (C.C.P.A. 1970) (correspondence from a co-author of a literature article confirming that the article misidentified a compound through a typographical error that would have been obvious to one of ordinary skill in the art was persuasive evidence that the erroneously typed compound was not put in the possession of the public).

Rejection of Claims 1 – 22 Over Malfer and Jessup. The Examiner has further rejected Claims 1-22 under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,048,373 ("*Malfer*") in view of U.S. Patent No. 5,288,393 ("*Jessup*"). This ground for rejection is likewise respectfully traversed. *Malfer*, like *Orr*, merely discloses a gasoline formulation which contains an alkanol. Applicants do not claim that a formulated gasoline composition containing an alkanol is novel. As stated above, and as illustrated in API Publication 4261, the addition of about 5% alkanol to a base gasoline renders an *increase* in the RVP. *Malfer* does not address the RVP of the formulated gasoline. There is no reason to believe that the RVP of the formulated blend would be inconsistent with the teachings of API Publication 4261. *Jessup* does not cure the deficiencies of *Malfer*. In fact, the only reference to alcohol or ethanol in *Jessup* appears in line

61 of column 4. The rejection over *Malfer* and *Jessup* is therefore improper and should not be maintained.

Rejection of Claims 1 - 29 over Niebylski in view of Cunningham I and II. The Examiner has rejected Claims 1-29 under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 4,317,657 ("*Niebylski*") in view of U.S. Patent No. 5,551,957 ("*Cunningham I*") and 5,679,116 ("*Cunningham II*"). This ground for rejection is likewise respectfully traversed.

Niebylski, like *Orr*, discloses a gasoline composition containing a cyclopentadienyl manganese antiknock agent. The composition may further contain an alkanol. The sole reference to an alkanol in *Niebylski* is in lines 1-2 of column 4. *Niebylski* does not discuss RVP, much less the relationship of RVP and an alcohol. Such deficiencies are not cured by *Cunningham I* nor *Cunningham II*. Each of *Cunningham I* and *Cunningham II* merely disclose fuels which may contain an oxygenate. Note, for instance, lines 42-46 of column 15 of *Cunningham I* and lines 63-66 of column 26 of *Cunningham II*; the latter further discloses, like *Orr*, antiknock agents containing an alkanol (see lines 58-60 of column 10). The fact that the secondary references disclose Applicants' dependent claimed ranges relating to 10% and 50% distillation points and RVP does not translate to the conclusion that the fuel composition of the secondary references, when combined with the teachings of *Niebylski*, would render obvious to one of reasonable skill in the art the claimed gasoline formulation of Applicants.

Rejection of Claims Under 1st Paragraph of 35 U.S.C. § 112. The Examiner has rejected Claims 1-29 under the first paragraph of 35 U.S.C. § 112 as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention.

This rejection is respectfully traversed. The Examiner's rejection of the *originally filed* claims under the written description requirement of 35 U.S.C. § 112 is misplaced. Originally filed claims comply with the written description requirement. *See Massachusetts Institute of Technology v. AB Fortia*, 227 USPQ 428 (Fed. Cir. 1985):

Original claims constitute their own description. Thus, the requirement is important only when the claims have been amended during prosecution of the application at the Patent and Trademark Office (PTO), being a requirement that the *new definition of the invention* in an amended claim be based on a *description originally in the specification*. The requirement assures that the newly defined invention is entitled to the original filing date of the application. (Emphasis added.)

See, further Department of Commerce, Patent and Trademark Office, "Request for Comments on Interim Guidelines for Examination of Patent Applications Under the 35 U.S.C. § 112 1 'Written Description' Requirement; Extension of Comment Period and Notice of Hearing," 63 Fed. Reg. 50887, 50888 (Sept. 1, 1998), reprinted in Chisum ed., *Chisum on Patents*, July 2000 Cumulative Supplement, p. 47, copy attached as *Exhibit A*.

This written description has several policy objectives. '[T]he "essential goal" of the description of the invention requirement is to clearly convey the information that an applicant has invented the subject matter which is claimed.' Another objective is to put the public in possession of what the applicant claims as the invention. The written description requirement prevents an applicant from claiming subject matter that was not described in the specification as filed, and the proscription against the introduction of new matter in a patent application serves to prevent an applicant from adding information that goes beyond the subject matter originally filed.

Since Applicants' claims are the originally filed claims and do not comprise a "new definition of the invention", the rejection under the first paragraph of 35 U.S.C. § 112 should be withdrawn.

Applicants clearly had possession of the invention of the claimed gasoline-oxygenate blend having the specified indices for Dry Vapor Pressure Equivalent (DVPE) and alcohol

content as delineated in the originally filed specification and claims on the date that the application was filed.

Rejection of Claims Under 2nd Paragraph of 35 U.S.C. § 112. The Examiner has further rejected Claims 23-29 under the second paragraph of 35 U.S.C. § 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Amendment of Claims 23-24 and 26-27 obviate the need of the rejection pertaining to as Claims 24 and 28. The Examiner's rejection of Claims 25 and 29 is respectfully traversed.

First, Applicants' claims clearly set forth the area over which exclusive rights are sought by Applicants. This is the criteria of the second paragraph of 35 U.S.C. § 112. As set forth by the C.C.P.A. in *In re Borkowaski*, 164 U.S.P.Q. 642, 645-646 (C.C.P.A. 1970):

The first sentence of the second paragraph of § 112 is essentially a requirement for *precision* and *definiteness* of claim language. If the scope of subject matter embraced by a claim is clear, and if the applicant has not otherwise indicated that he intends the claim to be of a different scope, then the claim does particularly point out and distinctly claim the subject matter which the applicant regards as his invention. (Emphasis in original.)

Second, as stated clearly throughout the specification, the crux of the invention is the use of alcohol to decrease MTBE in the production of gasoline-oxygenate blends in order to reduce emissions. The Doctrine of Claim Differentiation would dictate the conclusion that not all MTBE has been eliminated in independent Claims 23 and 26. Claims 25 and 29 are a refinement to Claims 23 and 26. Withdrawal of this rejection is therefore respectfully requested.

Citation of Art. The Examiner is further requested to acknowledge the two references filed in Supplemental Information Disclosure Statement on April 3, 2001. An additional copy of the Supplemental Information Disclosure Statement and accompanying references are attached.

Amendment to Specification. Amendments have been made to the specification in light of obvious typographical errors. The gasoline blends of Table 8 and Table 9 are the same.

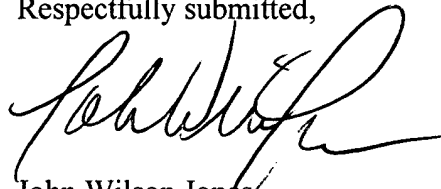
CONCLUSIONS

Attached hereto is a marked up version of the changes made to the Claims by the current Amendment. The attached pages are captioned "**Versions with markings to show changes made.**"

Applicants do not believe that any additional fees are required for consideration of the Supplemental Information Disclosure Statement or any other issues raised in this Amendment. To the extent Applicants are incorrect, the Commissioner is hereby authorized to charge any additional fees to Deposit Account No. 18-1800.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner to issue a Notice of Allowance. The Examiner is invited to telephone the undersigned should it be deemed prudent to expedite examination of this application.

Respectfully submitted,



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Dated: August 24, 2001

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being transmitted to the United States Patent
add Trademark Office, Washington, D.C. 20231, in accordance with 37 C.F.R.
§ 1.8(a), on this 24th day of August, 2001.



JOHN WILSON JONES



VERSION WITH MARKINGS TO SHOW CHANGES MADE

1 23. A process for preparing a gasoline-oxygenate blend comprising **combining a blend of**
2 **hydrocarbons with an alcohol**, ~~blending at least two hydrocarbon streams to produce a gasoline~~
3 wherein the resulting gasoline-oxygenate blend has the following properties:

4 (a) a Dry Vapor Pressure Equivalent less than about 7.1 PSI; and

5 (b) an alcohol content greater than about 5.8 volume percent.

1 24. **(Once Amended).** The process of Claim 23 ~~further comprising introducing ethanol~~
2 ~~during the blending~~ **wherein the alcohol is ethanol.**

1 26. **(Once Amended).** A process for preparing a gasoline-oxygenate blend comprising
2 ~~blending at least two hydrocarbon streams to produce a gasoline~~ **combining a blend of**
3 **hydrocarbons with an alcohol**, wherein the resulting gasoline-oxygenate blend has the
4 following properties:

5 (a) a Dry Vapor Pressure Equivalent less than about **7.0** PSI; and

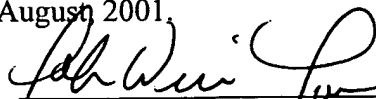
6 (b) an alcohol content greater than about 5.0 volume percent.

1 27. **(Once Amended)** The process of Claim 26 wherein the ~~resulting gasoline-oxygenate~~
2 ~~blend reduces toxic air pollutants emissions by more than about 30%~~ **alcohol is ethanol.**

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being transmitted to the Assistant Commissioner for Patents, BOX FEE AMENDMENT, Washington, D.C. 20231, in accordance with 37 C.F.R. § 1.8(a), on this 24th day of August, 2001.



JOHN WILSON JONES